

CLAIMS

1. A glass particle deposited body manufacturing method for manufacturing a glass particle deposited body, in which a plurality of glass particle synthesizing burners are arranged to be opposed to a rotating starting rod, comprising the steps of:

relatively reciprocating said starting rod and said glass particle synthesizing burners to move a turn-back location of reciprocating movement in a certain direction, and move said turn-back location in the reverse direction if said turn-back location is moved to a predetermined position, until each burner is returned to an initial position, which operation is defined as one set of operation, with an average reciprocating movement distance of said one set being less than double a burner-to-burner interval, and

depositing the glass particles on said starting rod by repeating said one set of operation.

2. The glass particle deposited body manufacturing method according to claim 1, wherein

the movement distance of said turn-back location of reciprocating movement each time is an almost equal interval.

3. The glass particle deposited body manufacturing method according to claim 1, wherein

one set of operation is defined as the operation in which when the turn-back location of reciprocating movement is moved to a predetermined position, each burner is returned to an initial position in the next movement.

4. The glass particle deposited body manufacturing method according to claim 1, wherein

one set of operation is defined as the operation in which each burner is moved to a predetermined position and turned back in the first movement, and then the turn-back location of reciprocating movement is moved in the direction to the initial position of each burner, until each burner is returned to the initial position.

5. The glass particle deposited body manufacturing method according to claim 1, wherein

the movement distance of the turn-back location of reciprocating movement is changed in the one set of operation.

6. The glass particle deposited body manufacturing method according to claim 1 or 2, wherein

said turn-back location of reciprocating movement has a movement range of about n (n is an integer from 1 to 3) times the burner interval.

7. The glass particle deposited body manufacturing method according to any one of claims 1, 3 to 5, wherein

 said turn-back location of reciprocating movement has a movement range of about n (n is an integer from 1 to 3) times the burner interval shorter by the minimum movement distance of the turn-back location in the one set of operation.

8. The glass particle deposited body manufacturing method according to any one of claims 1 to 7, wherein

 the average movement distance of said turn-back location of reciprocating movement each time in said one set of operation is about one- $(m+1)$ th (m is a natural number) the burner interval.

9. The glass particle deposited body manufacturing method according to claim 8, wherein

 assuming that the average movement distance of said turn-back location of reciprocating movement each time in said one set of operation is A_{mm} , and the average reciprocating movement distance in said one set of operation is D_{mm} , A falls within a range from 5 to 60mm, and D falls within a range $4 \times A \leq D \leq 240$.

10. The glass particle deposited body manufacturing method according to any one of claims 1 to 9, wherein

 the glass particle deposition end time is set at the time when the number of deposited layers on a stationary portion

is almost uniform in said reciprocating movement.

11. The glass particle deposited body manufacturing method according to claim 10, wherein

the reciprocating movement speed at which a target deposition amount of glass particles is achieved at said glass particle deposition end time is decided from the relationship between the reciprocating movement speed and the weight of glass particles deposited by the glass particle deposition end time, and said target deposition amount is achieved at said glass particle deposition end time by depositing glass particles at said decided speed.

12. A glass parent material manufacturing method for manufacturing a glass parent material, comprising the steps of:

producing a glass particle deposited body by the glass particle deposited body manufacturing method according to any one of claims 1 to 11, and

heating and vitrifying said produced glass particle deposited body to manufacture the glass parent material.